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Disk Drive With Read While Write Capability

by

Charles D. Ray

Gary Lee

and

Tony Hurtado

Field of the Invention

The present invention relates generally to disk drives and in particular to preamplifiers for disk drives.

Background of the Invention

Data storage devices such as disk drives are used for data storage and retrieval in a variety of applications. A disk drive includes a disk for storing information, a transducer (read/write) head for reading data from and writing data to the disk, a spindle motor for rotating the disk, a head carrier that supports the transducer head and an actuator for moving the head carrier and the transducer head. The disk drive may include multiple disks separated by spacer rings and stacked on a hub attached to the spindle motor, multiple transducer heads and multiple head carriers that each support at least one transducer head. The disk includes concentric tracks that each include servo sectors and interleaved data sectors. To access a data sector, the transducer head is moved radially across the tracks in a seek operation to the destination track that contains the data sector, and then the disk rotates the data sector under the transducer head for reading data from or writing data to the data sector.

The disk drive further includes a preamplifier connected to the transducer head. The preamplifier provides two mutually exclusive data transfer modes: a read mode in which data recorded on the disk is sensed by the transducer head and transmitted to the preamplifier for amplification in a read operation, and a write mode in which data transmitted to the preamplifier is recorded on the disk by the transducer head in a write operation.

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